

Date: Thu, 6 May 93 22:11:59 PDT  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V93 #551  
To: Info-Hams

Info-Hams Digest                      Thu, 6 May 93                      Volume 93 : Issue 551

Today's Topics:

Amateur Radio Scanner/Radio construction  
Chicago Scanner Law  
Daily Solar Geophysical Data Broadcast for 06 May  
IC-2410 Mods Request  
THE CALLSIGN DATABASE CD-ROM IS READY!  
WANTED: 30M VFO details for Explorer Rcvr (8/92 '73')

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 6 May 93 07:30:22 EDT  
From: usc!howland.reston.ans.net!darwin.sura.net!udel!news.intercon.com!psinnntp!  
arrl.org@network.UCSD.EDU  
Subject: Amateur Radio Scanner/Radio construction  
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, kellys@zen.holonet.net (Kelly Schwarzhoff) writes:

>I need to do a project based on electromagnetic radion for my physics class,  
>and, since I'm a HAM, I figured I'd make a HAM scanner. Does anyone know  
>of any sources that describe how to build a HAM scanner, or for that  
>matter, any type of radio or such?

-----

Date: 7 May 93 04:33:52 GMT  
From: ogicse!uwm.edu!cs.utexas.edu!zaphod.mps.ohio-state.edu!darwin.sura.net!

rouge!jab0684@network.UCSD.EDU  
Subject: Chicago Scanner Law  
To: info-hams@ucsd.edu

In article <930504220808\_71674.1610\_DHR41-2@CompuServe.COM>  
71674.1610@CompuServe.COM (TOM KRAVITZ) writes:

>The last time I talked to the FCC, they reminded me that it was illegal to  
>transfer third-party information, such as what you heard on the public  
>service frequencies without the permission of the agency. And..It is illegal  
>to use the info. for your personal profit or gain; without their permission.  
>News Media usually have blanket permission and I have not heard of any  
>agency who has hassles any media person. I guess the City of Chicago can  
>revoke their permission or try to inforce teh federal laws. I can't imagine  
>the "secret" police tracking you down for listening at home. Also, many laws  
>exclude "Amateur Radio Operators" from any ban on listening to scanners  
>either at home or in their vehicles. Good luck.

>

>

		M E D I A P A G E
Tom Kravitz	P. O. Box 1307	Breaking Stories To
CIS: 71674,1610	Culver City, CA 90232	The News Media
Prodigy: TKXD40A	(310) 838-1436	Since 1978

>

>

Tom, your mention of Amateurs being excluded in many laws from scanner bans brings up an interesting point. Since most modern amateur transceivers sold today are 'scanners,' it might be impossible for municipalities to ban their use by liscensed amateurs, since we have federal permission to operate such equipment.

This begs the question, did politicians who made the exclusions for amateurs do it because they thought it was appropriate for amateurs to be able to use scanners? Or(more likely in my eyes) did they do it to keep their Nazi laws from being struck down in federal court.

As always more informed opinions requested(particularly from the legal minded)

73 DE kb5udf  
kb5udf@ucs.usl.edu

-----

Date: 7 May 93 04:30:29 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Daily Solar Geophysical Data Broadcast for 06 May  
To: info-hams@ucsd.edu

NOTE: GOES-7 magnetometer data has been bad since 02 May. The problem has not yet been rectified.

!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 126, 05/06/93  
10.7 FLUX=120 90-AVG=130 SSN=084 BKI=2222 3332 BAI=010  
BGND-XRAY=B4.1 FLU1=2.1E+05 FLU10=1.3E+04 PKI=2222 3332 PAI=009  
BOU-DEV=012,016,015,018,026,035,022,010 DEV-AVG=019 NT SWF=00:000  
XRAY-MAX= C2.2 @ 1832UT XRAY-MIN= B3.5 @ 0811UT XRAY-AVG= B5.3  
NEUTN-MAX= +003% @ 2325UT NEUTN-MIN= -003% @ 0115UT NEUTN-AVG= +0.1%  
PCA-MAX= +0.1DB @ 2105UT PCA-MIN= -0.2DB @ 2035UT PCA-AVG= -0.0DB  
BOUTF-MAX=55400NT @ 1302UT BOUTF-MIN=55359NT @ 1903UT BOUTF-AVG=55384NT  
GOES7-MAX=P:+042NT@ 1554UT GOES7-MIN=N:-045NT@ 1554UT G7-AVG=-001,+014,-045  
GOES6-MAX=P:+136NT@ 1655UT GOES6-MIN=N:-098NT@ 0203UT G6-AVG=+094,-013,-049  
FLUXFCST=STD:125,130,130;SESC:125,130,130 BAI/PAI-FCST=015,025,020/020,035,020  
KFCST=3334 4433 4455 5444 27DAY-AP=017,020 27DAY-KP=3332 1435 5444 3333  
WARNINGS=\*SWF  
ALERTS=  
!!END-DATA!!

NOTE: The Effective Sunspot Number for 05 MAY 93 was 69.0.  
The Full Kp Indices for 05 MAY 93 are: 1+ 1o 3- 2o 3- 2- 2- 1+

-----  
Date: 7 May 1993 01:25:18 GMT  
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!gatech!  
destroyer!vela.acs.oakland.edu!argo.acs.oakland.edu!SDKUO@network.UCSD.EDU  
Subject: IC-2410 Mods Request  
To: info-hams@ucsd.edu

Title says it all. Could someone send me the mods for the Icom 2410  
mobile rig. Send everthing ya got.

thanks in advance,

--

Steve Kuo, N80PH, sdkuo@oakland.edu

-----  
Date: 6 May 1993 23:30:10 GMT  
From: sun-barr!west.West.Sun.COM!sunburn.Corp.Sun.COM!flloyd@ames.arpa  
Subject: THE CALLSIGN DATABASE CD-ROM IS READY!  
To: info-hams@ucsd.edu

Yes folks, the CD many of us have been waiting for is finally ready.  
My personal thanks to all those who contributed time, effort and  
suggestions to help make this a reality.

-fred, AA7BQ

\* \* \* Announcing the QRZ! Ham Radio CD-ROM \* \* \*

Hot off the presses, the QRZ! Ham Radio CD-ROM contains the complete US CALLSIGN DATABASE (March 1993 Edition) complete with PC (MSDOS) compatible search and retrieval software, and tons of ham related material totalling over 500 Megabytes!

Some of the features include:

- \* March 1993 US CALLSIGN DATABASE (in ASCII)
- \* PC (MSDOS) compatible search and retrieval software  
Search by callsign, name, city, zipcode, several  
output formats including screen, mailing lists, etc.
- \* ISO 9660 CD-ROM Format - readable on all systems
- \* Hundreds of popular ham related (shareware) programs
- \* Nearly 200 radio and scanner modifications
- \* USENET news articles from rec.ham-radio and  
rec.radio.amateur.{misc,packet,policy} since 1989
- \* Complete dumps of several internet ham radio archives
- \* Canadian and US CLUB callsigns
- \* FCC Rules and Regulations (Part 97)
- \* DX lists, DXCC info, BBS Lists
- \* UNIX callsign database/server 'C' source code
- \* SIMTEL20 Ham Radio Archive Files
- \* Vast amounts of useful reading information for the  
beginning to the advanced ham

The QRZ! disk is being supplied by Walnut Creek CD-ROM. You must contact them directly, using the info below:

-----  
If you want more details about this disc, you can ftp the readme and index from cdrom.com:/pub/cdroms/ham.

The price is \$25. S&H is \$5 for US/Canada/Mexico, and \$10 for overseas. If you live in California, please add sales tax. You can pay by check, money order, Visa/MC/Amex, gold bullion, small unmarked bills, etc.

Bob Bruce  
Walnut Creek CDRom  
1547 Palos Verdes Mall, Suite 260  
Walnut Creek, CA 94596

1 800 786-9907

1 510 674-0821 FAX  
orders@cdrom.com

Many of the programs on this disc are shareware, and require separate payment to the author for continued use. If you are dissatisfied with the disc for any reason you can return it for a full refund.

Here is a list of some other CD-ROM titles published by Walnut Creek CDRom:

CICA Microsoft Windows CD-ROM - Shareware collection from Ind Univ	\$25
Simtel20 MSDOS CD-ROM - shareware/PD swr collection	\$25
GIFs Galore - Thousands of GIF images	\$25
Hobbes OS/2 CD-ROM - shareware & PD swr collection for OS/2	\$25
Garbo MSDOS/MAC CD-ROM - shareware & PD for DOS and Mac	\$25
Sprite CDRom - Sprite Research Operating System	\$25
Nova CDRom - NeXT Workstation software	\$40
Source Code CD-ROM - Usenet source archives on CD-ROM	\$40
X11R5 and GNU CD-ROM - X11R5 Window System Source	\$40
C User's Group Library CDRom - C source code	\$50
Libris Britannia - British shareware	\$69

For a more detailed list, you can ftp the latest catalog from  
cdrom.com:/pub/catalog, or send email to info@cdrom.com.

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[ Fred Lloyd, AA7BQ	Fred.Lloyd@West.Sun.COM ]
[ Sun Microsystems,	Southwest Area Solaris Transition Manager ]
[ Phoenix, AZ	(602) 224-3517 ]

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Date: 7 May 93 00:58:01 GMT  
From: ogicse!emory!europa.eng.gtefsd.com!gatech!kd4nc!ke4zv!gary@network.UCSD.EDU  
Subject: WANTED: 30M VFO details for Explorer Rcvr (8/92 '73')  
To: info-hams@ucsd.edu

In article <1447@arrl.org> zlau@arrl.org (Zack Lau) writes:  
>In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:  
>>In article <1442@arrl.org> zlau@arrl.org (Zack Lau) writes:  
>>>In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:  
>>>>  
>>>>LC circuits scale nicely with frequency. To move from 40 to 30 meters,  
>>>>scale the inductance and capacitance by sqrt(30/40).  
>>>  
>>>??  
>>>  
>>>I would try scaling the inductance and capacitance inversely proportional  
>>>to frequency. For example, in going from 7MHz to 10 MHz, a 100 pF

>>>capacitor would be scaled to 70 pF, while the resonating inductor would  
>>>scale from 5.17 uH to 3.62 uH. You usually scale all the inductors  
>>>and capacitors, including the coupling/shunt elements.

>>>

>>>For casual use, this is probably close enough.

>>

>>Probably, but the formula is  $F=1/(2\pi\sqrt{LC})$  so scaling by the  
>>sqrt of the frequency ratio gives a better approximation. In this  
>>case, moving from 40 to 30 meters requires a 0.86 scale factor.

>

>So, to double F you need to halve  $\sqrt{LC}$ , according to the  
>formula.

Yes, and that requires scaling each of L and C by  $1/1.4142135\dots$   
or  $1/\sqrt{2}$ .

>Or, squaring both sides,  $F^2$  is proportional to  $1/LC$

Yes, or written another way to express the ratio:  $F1^2/F2^2=(L2*C2)/(L1*C1)$

>Note that if you make  $1/L$  proportional to F and  $1/C$  proportional  
>to F you get an \*exact\* scaling. Pretty convenient, IMO.

Yes, but the proportionality isn't a linear relationship, as you noted  
above, it's actually  $F^2$  that's proportional to  $1/LC$ . Don't confuse  
equal reactances with equal inductances and capacitances.

>It seems that Gary has botched the math. Fortunately, I have  
>lots of patience. :-).

Fortunately I have equal patience. I don't think I botched the math,  
you botched the concepts by making the leap from  $F^2$  proportional to  
 $1/LC$  to F being proportional to  $1/L$  and  $1/C$ . That's true, but it's  
only true for the combination if you scale \*one\* of L or C, not when  
you scale both at the same time. Then you must consider the squared  
terms and the scaling factor becomes  $F1^2/F2^2$ . Hmmm, I did botch  
the math,  $F1^2/F2^2$  isn't the same as  $\sqrt{F1/F2}$ . But it's not the  
same as simply scaling both L and C by  $F1/F2$  either as you propose.

>>>However, stuff like input and output impedances often vary  
>>>with frequency unless feedback is used to control them. Thus,  
>>>the networks may have to changed to accommodate the new impedances.

>>

>>If you move both reactances equally, the impedance of the network  
>>should remain the same at the new frequency as the unscaled network's  
>>impedance at the old frequency. If you only scale one of the reactances,  
>>the network impedance will change with the frequency shift.

>

>Sorry about that, I was writing about the impedances of the devices  
>being matched by the network, and not the network itself. This is  
>the great thing about MMIC or monolithic microwave integrated circuits  
>with 50 ohm input and output impedances. Your typical active mixer chip  
>isn't as well behaved.

Ok.

>I must say that associating terms like "feedback" or "control"  
>to passive LC circuits is a bit unusual. You working on something  
>really exotic?

Not me, you introduced the subject, note the nesting level. I just  
commented that you can keep the passive network's impedance transform  
constant by scaling both L and C together. If that's not your design  
goal, don't do it that way.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Thu, 6 May 1993 20:19:29 EST  
From: anomaly.sbs.com!mooch!news@uunet.uu.net  
To: info-hams@ucsd.edu

References <lu377sINNifl@news.bbn.com>,  
<930502.223633.5d6.rusnews.w165w@mooch.sbs.com>, <lud709INN1lh@news.bbn.com>  
Subject : Re: no-code defense

levin@bbn.com (KD10N) writes:

> I don't think it's even close to a majority (maybe they generate a  
> majority of the noise, though) and you haven't got a single survey,  
> poll, or even a made-up statistic to justify that statement. (Well,  
> I'll bet you could come up with a made-up statistic.)

Well how the hell would you know? What have you been licensed for, all  
of a couple years! I know many more hams than you that were licensed  
before NO-CODE and most agree with me! Like I said, a survey of hams  
would be shewed because of the current no-clues! It's not like code is  
even difficult. They are just lazy people would couldn't hack it!  
Either GET IT DONE or GET LOST!

```

-----
- Christopher Ogren NM1Z          | The politically correct -
- system@mooch.sbs.com           | term for no-codes is   -
- AMPRnet: nm1z@switch.w1cg-9    | "Morsely Challenged".  -
- [44.104.0.2]                  |                          -
- AX25net: NM1Z@KA1RCI.RI.USA.NA |                          -
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Date: Thu, 6 May 1993 20:26:21 EST
From: anomaly.sbs.com!mooch!news@uunet.uu.net
To: info-hams@ucsd.edu

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References <lu377sINNifl@news.bbn.com>, <C6Fp4o.F2L@news.Hawaii.Edu>,
<4MAY199320442342@zeus.tamu.edu>
Subject : Re: no-code defense

```

tmk9855@zeus.tamu.edu (Eh?) writes:

> I'm KJ5GU and I agree with Tony! (anti no-code license)

I'm NM1Z and so do I!

> It's not so much the "no-code technicians" that I don't like....It's  
> just the people that B&M and whine for ALL the privs with NONE of the effort.

Partly true.

> The HF bands are already crowded enough....the code requirement needs  
> to stay...I mean ...the technicians already have access to 50MHz and up! And  
> they can TALK there too.....and if they don't care to work to upgrade, they c  
> an

> Stay there as far as I'm concerned.

> (Whine, whine, whine...blah, blah, blah..."...I want access to ALL the  
> bands with NO code requirement!"...)

>

> Btw...I achieved extra class at the ripe old age of 20! Almost exactly  
> 2 years after my Novice!

Good job. I upgraded to extra around 18 myself. I am a 24 year old college grad now and am glad I got my license back then. I had calculus in high school so at least I understood the match in the exams. There are idiots out there which are high school dropouts and they are passing exams with trig and the like. Gimme a break! We need to change the exam format at the very least to something that CANNOT be memorized. That will keep many of the simpletons away. They can stay on 27 MHZ!



```

-----
- Christopher Ogren NM1Z          | The politically correct -
- system@mooch.sbs.com           | term for no-codes is   -
- AMPRnet: nm1z@switch.w1cg-9    | "Morsely Challenged". -
- [44.104.0.2]                  |                          -
- AX25net: NM1Z@KA1RCI.RI.USA.NA |                          -
-----

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-----
Date: (null)
From: (null)
Electronic Construction Projects
file: basconst.txt

```

Prepared as a membership service by the American Radio Relay League, Inc.,  
225 Main St., Newington CT 06111 (203) 666-1541 email: [tis@arrl.org](mailto:tis@arrl.org)

Note: There are many simple construction ideas or projects found in the ARRL Handbooks, the QRP Notebook, Solid State Design. The various tutorial series in QST (ie First Steps in Radio) also contain many construction ideas and schematics.

1978 February	QST A Universal Crystal Oscillator	p. 15
April	QST A 20-Meter High-Performance Direct- Conversion Receiver	p. 11
	QST Collecting the Ham's Tools of the Trade	p. 17
October	QST Build This "Sardine Sender"	p. 15
December	QST A 20-Meter VXO-Controlled, 6 Watt Transmitter	p. 11
1979 January	QST The YY Special Beginner's Receiver	p. 16
March	QST A Simple 10- and 15-Meter Converter	p. 21
August	QST	p. 11

# Build a Simple "Super" for SSB

September	QST Quick and Easy Circuit Boards for the Beginner	p. 30
October	QST The First One's Always the Hardest	p. 56
November	QST A Simple Utility Power Supply	p. 22
December	QST Transmitter Fundamentals	p. 11
	QST Build a VMOS Audio Amplifier	p. 22
1980 January	QST A Beginner's 3-Band VFO	p. 19
March	QST The Nitty-Gritty of Simple Receivers	p. 21
April	QST 20, 40 and 80 Meters with the "Basic Radio Receiver"	p. 22
October	QST Designing and Bending Metal Enclosures	p. 32
	QST Rewinding Transformers	p. 34
1981 March	QST A Variable Frequency Crystal Oscillator	p. 34 4 pages
July	QST The Burglar Alarm That Resets Automatically	p. 29
September	QST Experimenting for the Beginner	p. 11
1982 June	QST Build a Bare-Bones "Superhet"	p. 29 5 pages
1983 June	QST	p. 33

	Wire Antennas for the Beginner	6 pages
September	QST A Traveler's Receiver for 20 Meters	p. 31 2 pages
October	QST The Noise Maker - An Aid to Learning the Morse Code	p. 30 2 pages
November	QST A VXO CW Rig for 30 Meters	p. 31 4 pages
1984 March	QST An ANTenna System for the New Novice	p. 37 2 pages
May	QST A Battery Powered 30-Meter VFO	p. 35 3 pages
1985 January	QST A Simple 10-Meter FM Reciever	p. 19 8 pages
	QST Simple QRP Gear Versus Good Performance	p. 22 5 pages
April	QST A Converter for the 24-MHz WARC Band	p. 42 3 pages
August	QST A Semi-kit Receiver for 80/75 Meters	p. 34 4 pages
October	QST Better Ears for the MAVTI-40 Transcvr.	p. 14 8 pages
1986 February	QST Four Watts, QSK, fro 24.9 MHz	p. 23 4 pages
May	QST Learning to Work with Preamps	p. 21 3 pages
September	QST The SimpleCeiver (HF superhet)	p. 34 6 pages
December	QST Three Fine Mice - MOuSeFET CW Transmitters	p. 19 6 pages
	QST	p. 28

	The Flasher (blinky-lights)	2 pages
1987 June	QST The W2CXM 2-Meter Cube Receiver and Scanner	p. 15 7 pages
November	QST Build This QRP Omni Box	p. 18 5 pages
	QST A Real Turn-On (station pwr control)	p. 23 5 pages
December	QST How to Build and Use a VHF Wattmeter	p. 15 5 pages
	QST A Laboratory-Style RX Noise Bridge	p. 32 4 pages
1988 January	QST A New Breed of Receiver (phase method)	p. 16 8 pages
	QST Accessories for your VFO	p. 31 3 pages
February	QST The Neophyte Receiver	p. 14 5 pages
	QST Power Supplies, Quick and Easy	p. 23 3 pages
	QST Some QRP Transmitter Design Tips	p. 30 3 pages
March	QST The Cordless Phone Link (remote stn)	p. 21
	QST The Tox Box - station control center	p. 30
July	QST A Talking Wattmeter	p. 15
July	QST A Talking Wattmeter	p. 15
July	QST A Simple Tuning Indicator	p. 28

August	QST Preamplifier for 80- and 160-Meter	p. 15
August	QST A Versatile Timer/Controller	p. 25
August	QST Build it Yourself with Plastic	p. 30
September	QST A Dipper Amplifier for Impedance Bridges	p. 24
September	QST A Simple Resonant ATU	p. 26
October	QST A 3-Channel CW Emergency Transceiver - Part I	p. 26
November	QST A 3-Channel CW Emergency Transceiver - Part I	p. 17
1989 January	QST A Speaker Amplifier for Hand-held Transceivers	p. 20
January	QST A VFO with Bandset and Bandsread	p. 31
February	QST A Low-Cost Frequency Counter	p. 21
February	QST Transistor Radio a Ham Receivers	p. 33
March	QST A Simple 80-Meter Converter	p. 18
April	QST Power-FET Switches as RF Amplifiers	p. 30
May	QST A Practical Time-Domain Reflectometer	p. 22
May	QST A 4-Stage 75-Meter SSB Superhet	p. 25
May	QST	p. 29

# The C-Sub

May	QST Simple Low-Noise Preamplifiers	p. 31
June	QST Multi-Purpose Instrumentation Amplifier	p. 35
July	QST Build a Low-Cost Booster Microphone	p. 19
August	QST Improving and Using RX Noise Bridges	p. 27
September	QST The Switcher - station control	p. 18
September	QST A 1.25 to 25-V 2.5A Regulated Power Supply	p. 22
September	QST A Simple Secondary Frequency Standard	p. 29
October	QST A Computer-Controlled Digitized Speech System for SSB Contesting	p. 19
October	QST The QRP 3-Bander (transmitter)	p. 25
November	QST Some Power-Supply Design Hints	p. 29
December	QST A QRP SSB/CW Transceiver for 14 MHz	p. 18
1990 January	QST A Tester for Crystal F, Q and R	p. 21
January	QST A QRP SSB/CW Transceiver for 14 MHz.	p. 28
January	QST The Elevator: A simple 220-MHz Transverter	p. 32
February	QST A Simple and Accurate QRP Directional Wattmeter	p. 19

February	QST Cheap and Easy Control-Signal Level Converters (electronic switching)	p. 24
February	QST A Balanced Balanced Antenna Tuner	p. 28
March	QST Using-the MC2831A FM Transmitter Subsystem IC	p. 31
April	QST Hands-Off Mobile Operation	p. 25
May	QST An Audio Equalizer for Communications Use	p. 22
December	QST A Surface-Mount Technology Primer--Part 1	p. 48
1991 January	QST A Surface-Mount Technology Primer--Part 2	p. 27
March	QST Making Soldering Safer	p. 28
April	QST Connectors for (Almost) All Occasions-- Part 1	p. 35
May	QST Connectors for (Almost) All Occasions-- Part 2	p. 34
June	QST Build a Universal VFO	p. 27

Last update 6/91 (we are overdue for an update). Consult the index found in each December QST issue for more recent articles.

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Ed Hare, KA1CV  
American Radio Relay League  
225 Main St.  
Newington, CT 06111  
(203) 666-1541 - voice

ehare@arrl.org

You will never put the puzzle together  
if you keep putting all the pieces

ARRL Laboratory Supervisor        back in the box.  
RFI, xmtr and rcvr testing

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End of Info-Hams Digest V93 #551  
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